

**Recovery Plan Action Status****Plan Name: Recovery Plan for the Big Island Plant Cluster****Plan Status: Final****Plan Date: 26-Sep-96****Lead Agency: USFWS****Lead Office: Pacific Islands Fish And Wildlife Office****(808)  
792-9400 )**

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
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Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	111	Locate, verify and delineate all extant wild populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service	Research: Population Surveys	Contract, Internal Field Assistance, Species Expert	This is an ongoing action, as the status of the species and their threats change constantly. NOTE: For all tasks in this recovery plan, only the 22 species in the first Big Island plan are being addressed. The other 13 are addressed in the Big Island addendum.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	111	Locate, verify and delineate all extant wild populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service, Ola'a Kilauea Management Group	Research: Population Surveys	Contract	This is an ongoing action, as the status of the species and their threats change constantly. NOTE: For all tasks in this recovery plan, only the 13 species in the Big Island addendum are being addressed. The other 22 are addressed in the original Big Island plan.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	112	Delineate management units for preservation	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Management: Planning	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task has been initiated through the development of essential plant habitat by the HPPRCC and CH designations, but needs to be refined for each species and its full recovery needs.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), `Oha wai (Clermontia drepanomorpha), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	1	1132	Continue and enhance protection on other public lands	Partially Complete	Prior to FY 1995		Hawaii Department of Land and Natural Resources, Ola'a Kilauea Management Group	Acquisition	Internal Administrative	This task is complete for Olaa-Kilauea Management Group, partially complete for DLNR's Puu Waawaa area and several small DLNR exclosures throughout the Big Island for individual species.

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Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), Kula wahine noho (Isodendron pyriform), 'Aiea (Nothocestrum breviflorum), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), 'Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	1133	Continue and enhance protection on private lands	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Private landowners, Ola'a Kilauea Management Group	Acquisition: Easement, Acquisition: Exchange, Acquisition: Fee Title, Acquisition: Lease, Acquisition: Management Agreement, Management: Habitat Maintenance and Manipulation	Contract, Internal Administrative, Internal Technical Assistance, Volunteer	This task is partially complete for Kilauea and Keauhou lands within the Olaa-Kilauea Management Group.
Kiponapona (Phyllostegia racemosa), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri)	1	1133	Continue and enhance protection on private lands	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Private landowners, Ola'a Kilauea Management Group	Acquisition: Management Agreement	Contract	This task is partially complete for Kilauea and Keauhou lands within the Olaa-Kilauea Management Group for several species and ranch lands in South Kona for Pritchardia schattaueri through private lands funding. \$5150 from PIFWO Partners for Fish and Wildlife Program has gone toward 5 acres of fence at Ku Ohia Laka in Puna, which includes habitat for the reintroduction of Phyllostegia velutina.



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`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	121	Develop management plans for each management unit	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola'a Kilauea Management Group	Management: Planning	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	OKMG and NPS have strategic plans, DOD is in the process of developing one for Pohakuloa Training Area, NWR is in the process of developing one for Hakalau, and DLNR is in the process of developing one for Puu Waawaa.

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Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	121	Develop management plans for each management unit	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola'a Kilauea Management Group	Management: Planning	Contract	OKMG and NPS have strategic plans, DOD is in the process of developing one for Pohakuloa Training Area, and DLNR is in the process of developing one for Puu Waawaa.

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<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12211	Construct and maintain fencing	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola‘a Kilauea Management Group	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	<p>This task is ongoing for OKMG, NWR, NPS, DOD, and DLNR. Additional fencing is planned for all of these lands. However, there are still areas of suitable habitat needed for recovery that are not fenced or planned.</p>

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Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	1	12211	Construct and maintain fencing	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola'a Kilauea Management Group	Management: Habitat Maintenance and Manipulation	Contract	This task is ongoing for OKMG, NWR, NPS, DOD, and DLNR. Additional fencing is planned for all of these lands. However, there are still areas of suitable habitat needed for recovery that are not fenced or planned.

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Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), `Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), `Anunu (Sicyos alba)	2	12212	Evaluate alternative means for control of ungulates	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation	Contract	Studies on the control of feral ungulates have been conducted for numerous other areas, and the results of these studies are being used to determine the best method of ungulate control in suitable habitats for these species.

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Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Kauila (Colubrina oppositifolia), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	12231	Establish impacts of alien plants and determine species necessary to control	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Identity of alien plants needing control is an ongoing task that will never be complete, as new pest plant species are continually introduced to Hawaii and can become established in natural areas.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	12231	Establish impacts of alien plants and determine species necessary to control	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service	Management: Habitat Maintenance and Manipulation	Contract	Identity of alien plants needing control is an ongoing task that will never be complete, as new pest plant species are continually introduced to Hawaii and can become established in natural areas.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Kauila (Colubrina oppositifolia), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), 'Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), 'Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), 'Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	12232	Determine effective control methods and implement alien plant control program	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Control of alien plants is an ongoing task that may be reduced to low maintenance and monitoring levels, but will never be completely eradicated, especially as new pest plant species are continually introduced to Hawaii and can become established in natural areas. Effective control methods are continually being developed by the Invasive Species Committees on each island and the results are applied to other natural areas.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	1224	Control diseases, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Management: Disease Control	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert	This task has not been started because no disease threat has been detected for any of these species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	1224	Control diseases, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture	Management: Disease Control	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance	This task has not been started because no disease threat has been detected for any of these species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A`e (Zanthoxylum dipetalum var. tomentosum), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei)	1	12251	Determine impacts of wildfire on taxa	Complete	FY 1995 - FY 1999	FY 2000 - FY 2004	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation	Contract	The negative impacts of fire on Hawaiian ecosystems is now well understood, and efforts are necessary to control wildfire in any dry habitats.



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12251	Determine impacts of wildfire on taxa	Complete	FY 1995 - FY 1999	FY 1995 - FY 1999	U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Management: Habitat Maintenance and Manipulation, Research: Management Techniques	Contract, Internal Field Assistance, Internal Technical Assistance	The negative impacts of fire on Hawaiian ecosystems is now well understood, and efforts are necessary to control wildfire in any dry habitats.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothoctrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12252	Develop and implement fire protection and response plans	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation, Management: Planning	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Fire plans have been developed and are being implemented for Puu Waawaa (DLNR), Hawaii Volcanoes National Park (NPS) and Pohakuloa Training (DOD). The Hawaii County Fire Department is aware of the Isodendron pyralarium and other endangered plant populations at Kealakehe in case of a fire in that area. Most of the other species do not inhabit high fire risk habitats.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoctrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	12261	Determine impacts of and manage hunting and other recreational activities	Partially Complete	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources	Research: Other Information, Research: Predation	Contract, Graduate Student, Internal Field Assistance, Species Expert	The negative impacts of maintaining a population of nonnative ungulates for public hunting purposes is well understood, and therefore the only acceptable level of nonnative ungulates in an area managed for endangered species recovery is zero. The impacts of other recreational uses are not as well understood, and research continues on these threats.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	123	Monitor status of wild populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service, Private landowners, Ola'a Kilauea Management Group	Research: Population Surveys	Contract	This task is ongoing, but does not occur as frequently as it should - at least once each year, and more frequently for extremely rare species (<50 individuals in the wild).

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	1	123	Monitor status of wild populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, U.S. Geological Survey, Biological Resources Division, National Park Service, Private landowners	Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	This task is ongoing, but does not occur as frequently as it should - at least once each year, and more frequently for extremely rare species (<50 individuals in the wild).

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	124	Revise management plans, as necessary	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Planning	Contract, Graduate Student, Internal Technical Assistance, Species Expert	Management plans include adaptive management, and therefore are changed whenever monitoring indicates alternative methods may be needed to fully implement a particular task of if a particular task is no longer needed.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	124	Revise management plans, as necessary	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Planning	Contract	Management plans include adaptive management, and therefore are changed whenever monitoring indicates alternative methods may be needed to fully implement a particular task of if a particular task is no longer needed.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	13	Maintain genetic stock of each taxon ex situ	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources	Management: Propagation	Contract	This task is complete for Hibiscadelphus giffardianus and H. hualalaiensis, which are now both extinct in the wild, but for the other species in this recovery plan the existing ex situ collections are not genetically adequate.



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	13	Maintain genetic stock of each taxon ex situ	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources	Management: Propagation	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	This task is complete for Clermontia pelana and Delissea undulata under its most recent taxonomic treatment as a Big Island endemic, which are now both extinct in the wild, but for the other species in this recovery plan the existing ex situ collections are not genetically adequate.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	2	21	Establish ecosystem history and collect diagnostic data on associated ecosystem components	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Field Assistance, Species Expert	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan. Additional studies are needed to develop more precise microclimate needs for each species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	21	Establish ecosystem history and collect diagnostic data on associated ecosystem components	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Habitat Status	Contract	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan. Additional studies are needed to develop more precise microclimate needs for each species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	22	Define habitat requirements for each taxon	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Habitat Status	Contract	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan, but needs to be refined for each species and its full recovery needs.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	22	Define habitat requirements for each taxon	Partially Complete	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Other: Regulations, Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Administrative, Internal Technical Assistance, Species Expert	Critical habitat, and the suitable habitat from which critical habitat was derived, has been identified for all species in this recovery plan, but needs to be refined for each species and its full recovery needs.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	23	Determine population characteristics for each taxon	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	23	Determine population characteristics for each taxon	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	24	Determine the reproductive potential of each taxon	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Genetics, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	24	Determine the reproductive potential of each taxon	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoctrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	251	Study pollen and seed formation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	251	Study pollen and seed formation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	252	Study pollination ecology	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Migration, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	252	Study pollination ecology	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothoestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	253	Study germination and seedling establishment	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Competition, Research: Demographic Studies, Research: Disease, Research: Environmental Contaminants, Research: Genetics, Research: Habitat Requirements, Research: Management Techniques, Research: Migration, Research: Other Information, Research: Predation, Research: Propagation, Research: Reintroduction, Research: Taxonomic Studies	Contract, Graduate Student, Internal Field Assistance, Species Expert	The current knowledge has been gathered mainly from incidental observations during propagation, field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	253	Study germination and seedling establishment	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Population Surveys	Contract	The current knowledge has been gathered mainly from incidental observations during field surveys and monitoring. More detailed experimental research is needed to fully understand these aspects of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrrularia), Kula wahine noho (Isodendron pyriform), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	2	31	Identify populations for augmentation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, Ola'a Kilauea Management Group	Acquisition: General, Management: Planning	Contract, Graduate Student, Internal Field Assistance, Species Expert	Any population of a short-lived perennial with fewer than 50 mature individuals and a long-lived perennial with fewer than 25 mature individuals that do not exhibit increased reproduction after the major threats are managed is considered for augmentation.



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	31	Identify populations for augmentation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Planning	Contract	Any population of a short-lived perennial with fewer than 50 mature individuals and a long-lived perennial with fewer than 25 mature individuals that do not exhibit increased reproduction after the major threats are managed is considered for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	32	Propagate material for augmentation	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, U.S. Department of Defense	Management: Propagation	Contract	Volcano Rare Plant Facility propagates many species for augmentation by NPS, OKMG, DLNR, and various private landowners with grants from ES or DLNR. DOD has their own facilities to propagation material for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	32	Propagate material for augmentation	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Botanical Gardens, Hawaii Department of Land and Natural Resources, Hawaii Department of Agriculture, U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service, Refuge Division, Ola`a Kilauea Management Group	Management: Propagation, Management: Reintroduction	Contract, Internal Technical Assistance, Volunteer	Volcano Rare Plant Facility propagates many species for augmentation by NPS, OKMG, DLNR, and various private landowners with grants from ES or DLNR. NWR and DOD have their own facilities to propagation material for augmentation.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	33	Prepare sites and augment wild populations	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Reintroduction	Contract	Augmentations are occurring for some species on NPS, OKMG, DLNR, and various private landowners lands, and are planned on DOD lands.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	33	Prepare sites and augment wild populations	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners, U.S. Fish and Wildlife Service, Refuge Division, Ola`a Kilauea Management Group	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control, Management: Reintroduction	Contract, Internal Field Assistance, Volunteer	Augmentations are occurring for some species on NPS, NWR, OKMG, DLNR, and various private landowners lands, and are planned on DOD lands.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	2	34	Maintain, monitor and evaluate outplantings	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control, Management: Reintroduction, Research: Management Techniques, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	This is an ongoing action, as the status of the species and their threats change constantly, and is currently not occurring as frequently as it should - at least once a year.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	2	34	Maintain, monitor and evaluate outplantings	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Reintroduction	Contract	This is an ongoing action, as the status of the species and their threats change constantly, and is currently not occurring as frequently as it should - at least once a year.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	3	41	Select new population sites, and obtain approval and long-term protection for site	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Acquisition: General, Management: Planning	Internal Administrative, Internal Technical Assistance, Species Expert	Sites have been selected on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	41	Select new population sites, and obtain approval and long-term protection for site	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Planning	Internal Administrative	Sites have been selected on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po`e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo`ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha`iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A`e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha`iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	3	42	Control threats to plants at new sites	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Disease Control, Management: Habitat Maintenance and Manipulation, Management: Predator and Competitor Control	Contract, Internal Field Assistance, Internal Technical Assistance, Volunteer	Threat control is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Oha wai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	42	Control threats to plants at new sites	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Habitat Maintenance and Manipulation	Contract	Threat control is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	43	Transplant selected material	Ongoing Not Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, U.S. Fish and Wildlife Service, Refuge Division, Ola‘a Kilauea Management Group	Management: Reintroduction	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert, Volunteer	Reintroductions are occurring for several species on NPS, NWR, OKMG, DLNR, and various private landowners lands and are planned on DOD lands. However, more reintroductions are needed to recover most of the species in this plan.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	43	Transplant selected material	Ongoing Not Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Reintroduction	Contract	Reintroduction is occurring on NPS, NWR, OKMG, DLNR, DOD, and various private landowners lands for reintroduction. However, more reintroductions are needed to recover most of the species in this plan.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyrularia), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	1	44	Maintain, monitor and evaluate new populations	Ongoing Current	Prior to FY 1995		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service, Private landowners	Management: Habitat Maintenance and Manipulation, Management: Planning, Management: Predator and Competitor Control, Research: Population Surveys	Contract, Graduate Student, Internal Field Assistance, Species Expert	This task is ongoing whenever new populations are located.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	1	44	Maintain, monitor and evaluate new populations	Ongoing Current	FY 1995 - FY 1999		U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Department of Defense, National Park Service	Management: Habitat Maintenance and Manipulation	Contract	This task is ongoing whenever new populations are located.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>‘Oha wai (Clermontia peleana), Po‘e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Lo‘ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ‘Oha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), ‘Aiea (Nothocestrum breviflorum), Ha‘iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A‘e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ‘Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha‘iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	51	Validate the number of individuals and populations necessary for recovery of each taxon.	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division, Hawaii Department of Land and Natural Resources, U.S. Geological Survey, Biological Resources Division	Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys	Contract, Internal Field Assistance, Internal Technical Assistance, Species Expert	



Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
<p>ʻOha wai (Clermontia peleana), Poʻe (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi laukahi (Plantago hawaiiensis), Loʻulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), ʻOha wai (Clermontia pyralaria), Kula wahine noho (Isodendron pyrifolium), ʻAiea (Nothocestrum breviflorum), Haʻiwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), Aʻe (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), ʻOha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Haʻiwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)</p>	3	52	Refine/revise downlisting and delisting criteria, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning, Research: Demographic Studies, Research: Habitat Requirements, Research: Habitat Status, Research: Population Surveys	Contract, Internal Technical Assistance, Species Expert	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	52	Refine/revise downlisting and delisting criteria, as necessary	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning	Contract	

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
`Oha wai (Clermontia peleana), Po'e (Portulaca sclerocarpa), Haha (Cyanea stictophylla), Holei (Ochrosia kilaueaensis), Haha (Cyanea shipmanii), Kauila (Colubrina oppositifolia), Kuahiwi iaukahi (Plantago hawaiiensis), Lo'ulu (Pritchardia affinis), No common name (Tetramolopium arenarium), No common name (Delissea undulata), `Oha wai (Clermontia pyricularia), Kula wahine noho (Isodendron pyrifolium), `Aiea (Nothocestrum breviflorum), Ha'iwale (Cyrtandra giffardii), Haha (Cyanea copelandii ssp. copelandii), A'e (Zanthoxylum hawaiiense), Haha (Cyanea hamatiflora ssp. carlsonii), `Oha wai (Clermontia lindseyana), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), Ha'iwale (Cyrtandra tintinnabula), No common name (Mariscus fauriei)	3	53	Evaluate species for downlisting and delisting	Partially Complete	FY 2005	FY 2017	U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning, Other: Regulations, Research: Demographic Studies, Research: Genetics, Research: Habitat Requirements, Research: Habitat Status, Research: Management Techniques, Research: Population Surveys, Research: Reintroduction	Internal Technical Assistance, Species Expert	Silene hawaiiensis has been assessed as part of the 5-year review initiated in 2009, as the Army has requested it to be delisted. Additional surveys are needed to assess the status and management level of the species.

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Alani (Melicope zahlbruckneri), Kiponapona (Phyllostegia racemosa), Hau kuahiwi (Hibiscadelphus hualalaiensis), No common name (Neraudia ovata), Lo'ulu (Pritchardia schattaueri), 'Ohawai (Clermontia drepanomorpha), No common name (Tetramolopium arenarium), No common name (Delissea undulata), A'e (Zanthoxylum dipetalum var. tomentosum), Haha (Cyanea platyphylla), No common name (Phyllostegia velutina), Hala pepe (Pleomele hawaiiensis), Hau kuahiwi (Hibiscadelphus giffardianus), Hilo ischaemum (Ischaemum byrone), No common name (Silene hawaiiensis), No common name (Mariscus fauriei), No common name (Phyllostegia warshaueri), 'Anunu (Sicyos alba)	3	53	Evaluate species for downlisting and delisting	Not Started			U.S. Fish and Wildlife Service, Ecological Services Division	Management: Planning	Internal Technical Assistance	